

INDEX OF SHEETS

SHEET NO.

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STANDARD PLANS

920-R7	(3 SHEETS) TRAFFIC CONTROL, CONSTRUCTION AND MAINTENANCE
926	(2 SHEETS) TYPICAL LANE CLOSURE PLAN FOR MULTILANE ROADWAYS

STATE OF NEBRASKA  
DEPARTMENT OF TRANSPORTATION  
PLANS FOR CONSTRUCTION  
WEST OF SIDNEY -  
EAST OF SIDNEY  
CHEYENNE COUNTY

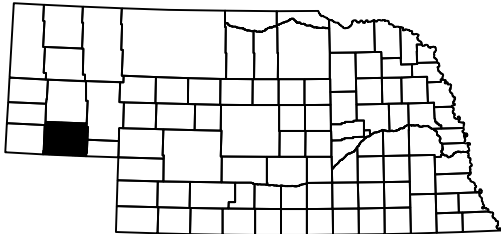
PROJECT NO.	SHEET NO.
NH-80-1(202)	A1
▲ CONTROL NO.	51604
▲ CONTROL NO.	
■ CONTROL NO.	

THE 2017 EDITION OF THE NEBRASKA STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS APPLY TO THIS PROJECT.

THE WORK ON THIS PROJECT CONSISTS OF GROUPS  
8 - SPECIALTY & 10 - GENERAL

▲ GROUPS	8 & 10	ARE INCLUDED
IN THE LETTING OF	JULY 25, 2019	
▲ GROUPS		ARE INCLUDED
IN THE LETTING OF		
■ GROUPS		ARE INCLUDED
IN THE LETTING OF		

DESIGN DESIGNATION
3R INTERSTATE
TRAFFIC
YEAR: 2020 2030
ADT: 7,485 7,545
DHV: 895 900
T= 62 % D= - %



CONVENTIONAL SIGNS

FENCE R.O.W. OR WIRE	—x—x—x—
GUARDRAIL	—=—=—=—=—
TRAVELED WAY	—=—=—=—=—
DIKE	—x—x—x—x—x—x—x—
CULVERT	—x—x—x—x—x—x—x—
POWER POLE	—●—●—●—●—●—
TELEPHONE POLE	—●—●—●—●—●—
MAILBOX	—□—□—□—□—□—
RAILROAD TRACKS	—x—x—x—x—x—x—x—
MARSH	—x—x—x—x—x—x—x—
TREE - CONIFEROUS	—x—x—x—x—x—x—x—
TREE - DECIDUOUS	—x—x—x—x—x—x—x—

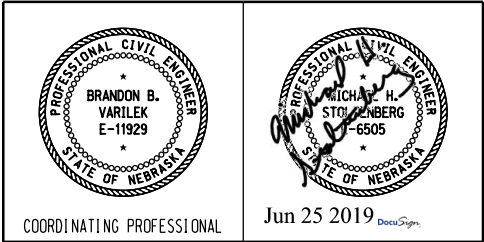
R.O.W. LEGEND

NEW CONTROLLED ACCESS	—x—x—x—x—x—x—x—
PREVIOUS CONTROLLED ACCESS	—x—x—x—x—x—x—x—
LIMITS OF CONSTRUCTION	—x—x—x—x—x—x—x—
PREVIOUS R.O.W.	—x—x—x—x—x—x—x—
NEW R.O.W.	—x—x—x—x—x—x—x—
EXISTING PERMANENT EASEMENT	—x—x—x—x—x—x—x—
TEMPORARY EASEMENT	—x—x—x—x—x—x—x—
EXCESS TAKING	—x—x—x—x—x—x—x—
PERMANENT EASEMENT	—x—x—x—x—x—x—x—
EXISTING RAILROAD EASEMENT	—x—x—x—x—x—x—x—
NEW RAILROAD PERMANENT EASEMENT	—x—x—x—x—x—x—x—
NEW RAILROAD TEMPORARY EASEMENT	—x—x—x—x—x—x—x—

REFERENCE POST NO. 53+98 TO REFERENCE POST NO. 60+70

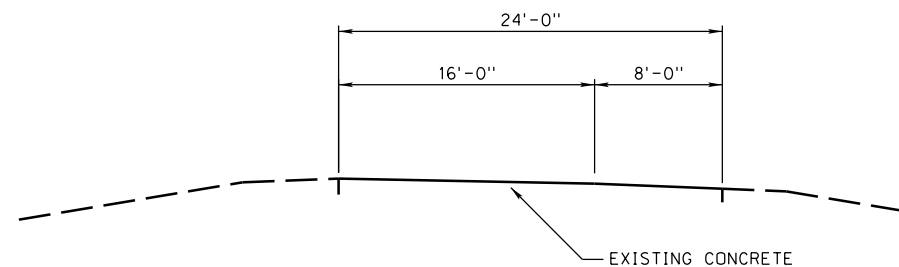
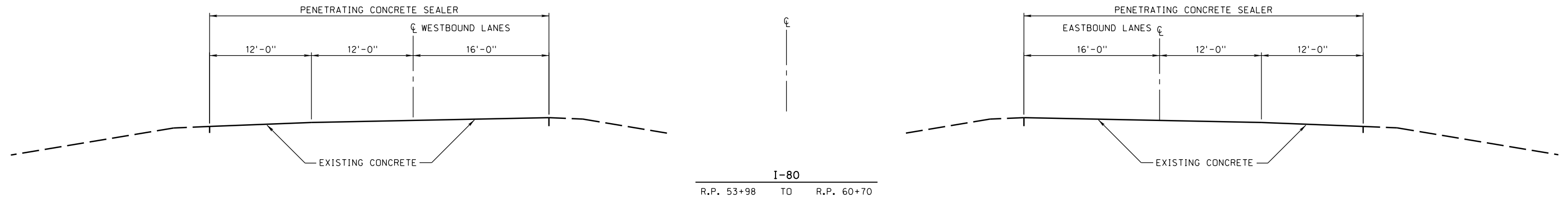
EXCEPTIONS: FROM STA. TO STA.

TOTAL NET LENGTH OF PROJECT: 35,481 FEET 6.72 MILES



# TYPICAL CROSS SECTIONS

PROJECT NO.	SHEET NO.
80-11(202)	B1
C.N. 51604	

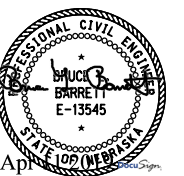


## HWY. N-19 INTERCHANGE

WESTBOUND OFF-RAMP  
EASTBOUND ON-RAMP  
EASTBOUND OFF-RAMP  
WESTBOUND ON-RAMP

## LINK 17J INTERCHANGE

WESTBOUND OFF-RAMP  
EASTBOUND ON-RAMP  
EASTBOUND OFF-RAMP  
WESTBOUND ON-RAMP



# SUMMARY OF QUANTITIES

PROJECT NO.	SHEET NO.
NH-80-1(202)	C1

C.N. 51604

## SPECIALTY ITEMS GROUP 8

ITEM	QUANTITY	UNITS
MOBILIZATION	1.000	LS
PENETRATING CONCRETE SEALER	9,920.000	GAL

## GENERAL ITEMS GROUP 10

ITEM	QUANTITY	UNITS
BARRICADE, TYPE II	2,400.000	BDAY
BARRICADE, TYPE III	254.000	BDAY
TEMPORARY SIGN DAY	425.000	EACH
SIGN DAY	784.000	EACH
FLASHING ARROW PANEL	30.000	DAY
TRAINING	100.000	HOURL
MOBILIZATION	1.000	LS
ENVIRONMENTAL COMMITMENTS - CONTRACTOR COMPLIANCE	1.000	LS



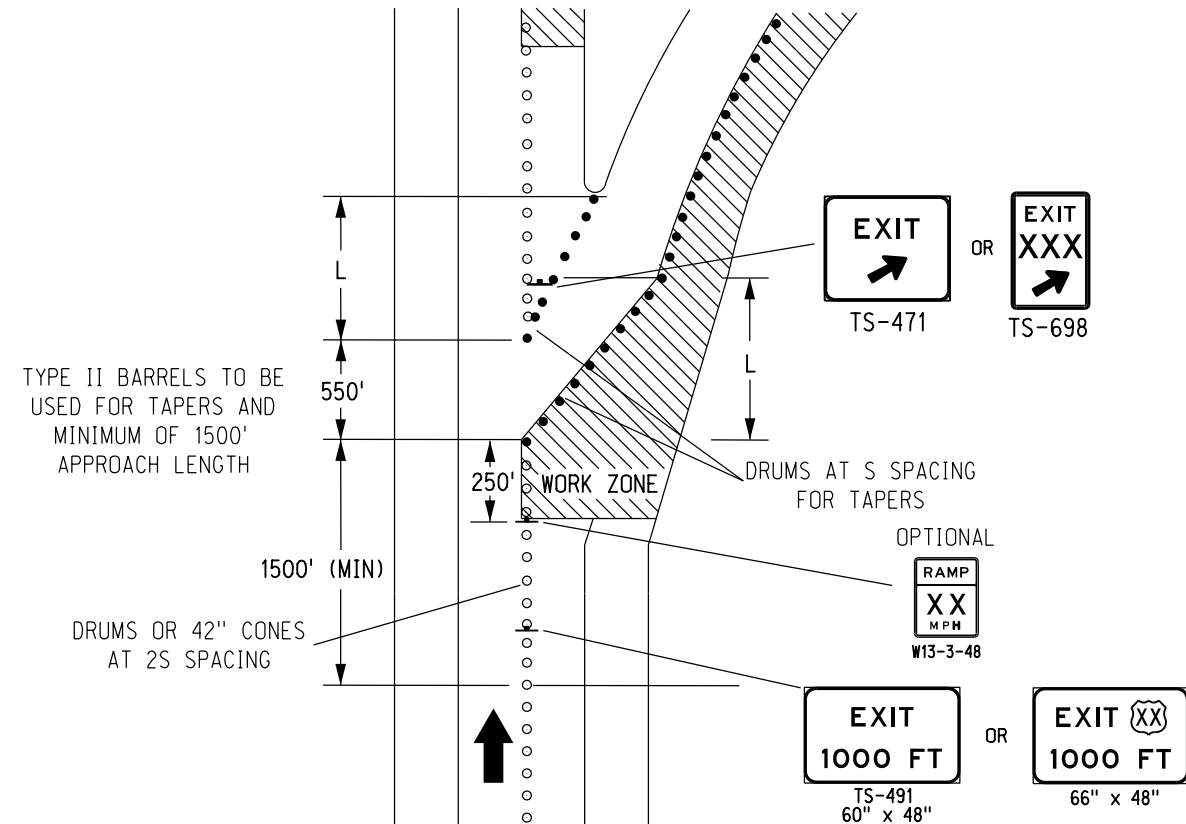
May 29 2019 DocuSign

ROADWAY DESIGN DIVISION.

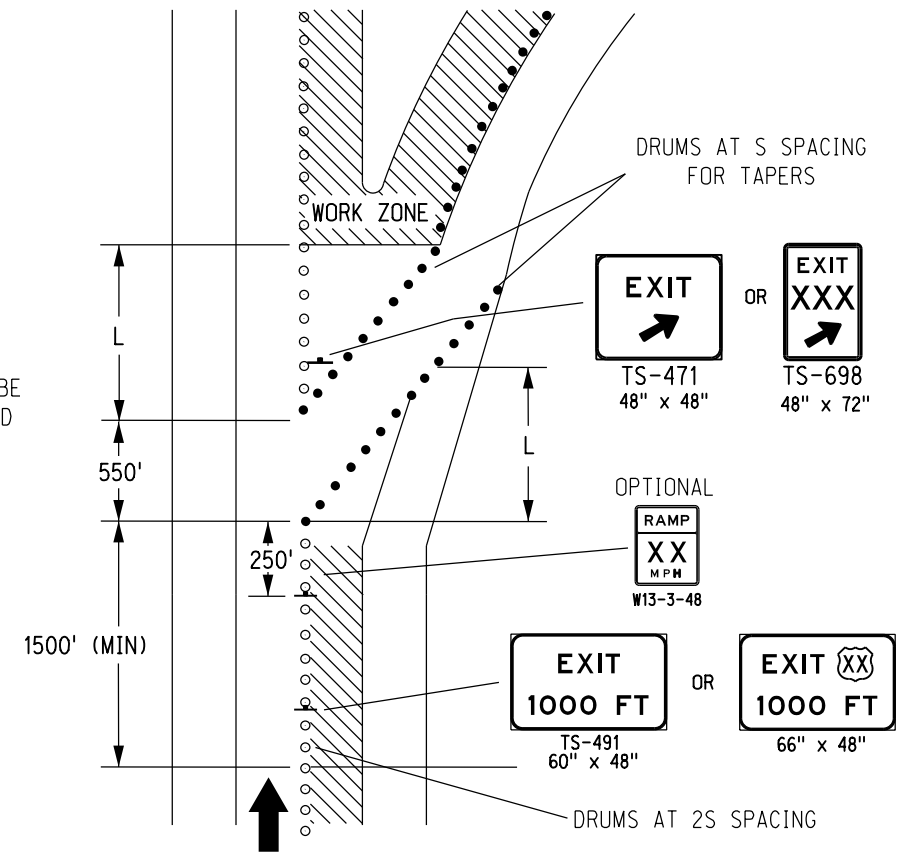
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Date: 29-MAY-2019 07:55

## Work in Vicinity of Exit Ramp



TYPE II BARRELS TO BE USED FOR TAPERS AND MINIMUM OF 1500' APPROACH LENGTH



TYPE II BARRELS TO BE USED FOR TAPERS AND MINIMUM OF 1500' APPROACH LENGTH

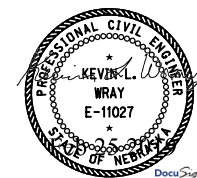
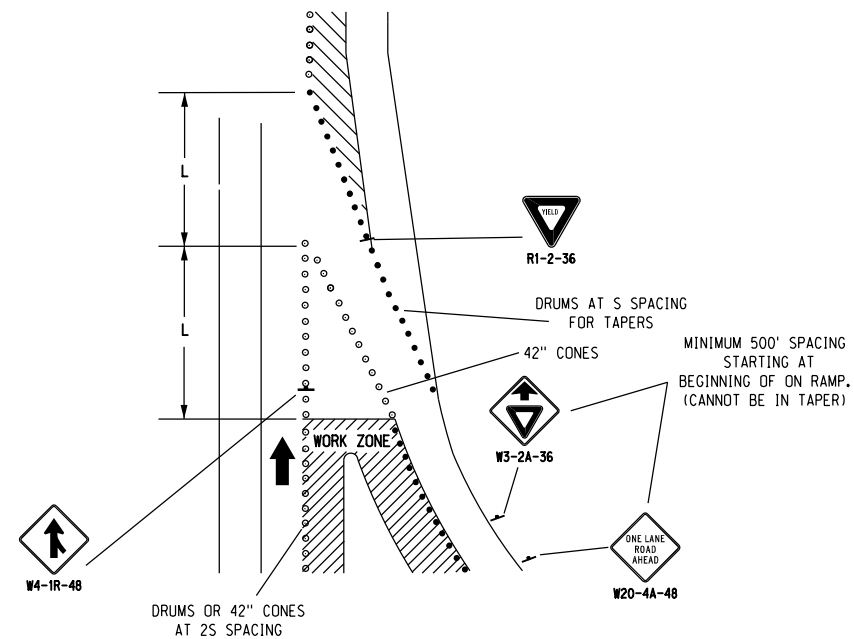
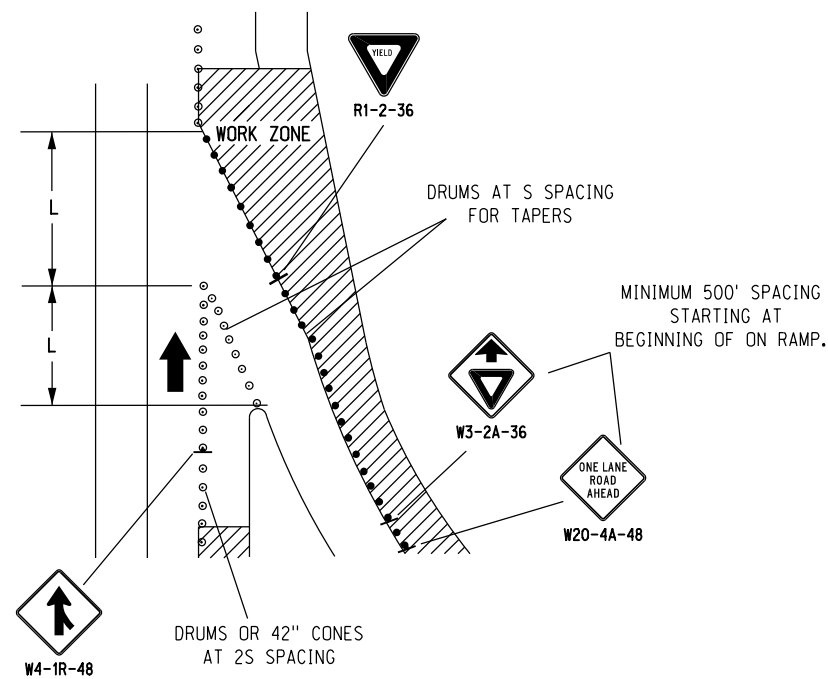
### NOTES


- L = WS
- L = TAPER LENGTH IN FEET
- W = WIDTH OF OFFSET IN FEET
- S = POSTED SPEED (MPH) LIMIT PRIOR TO WORK STARTING

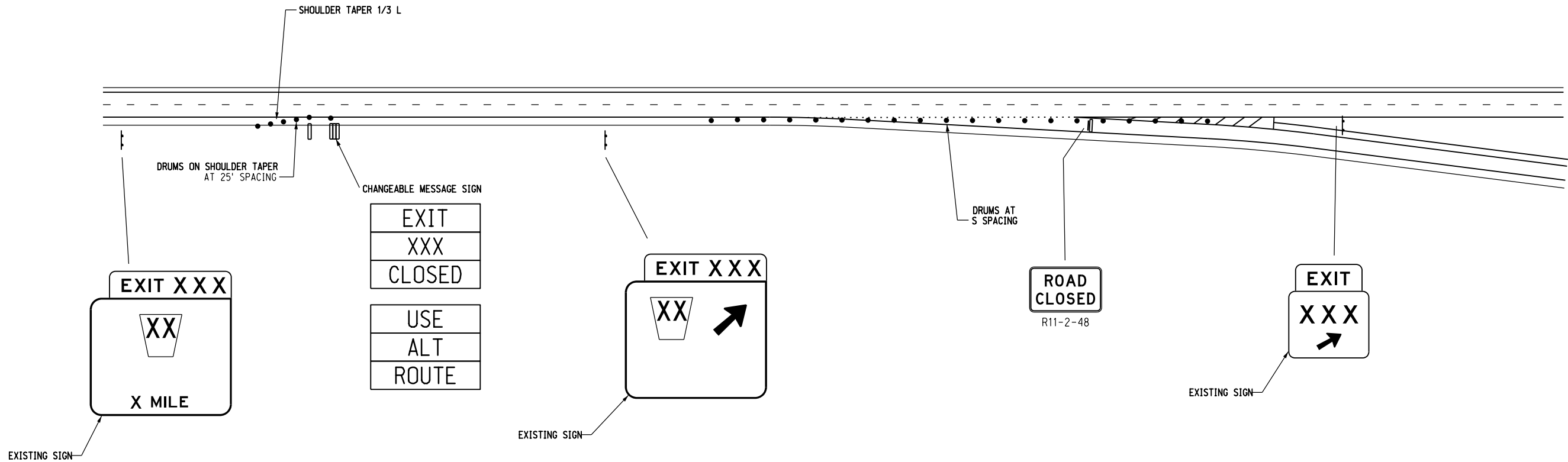
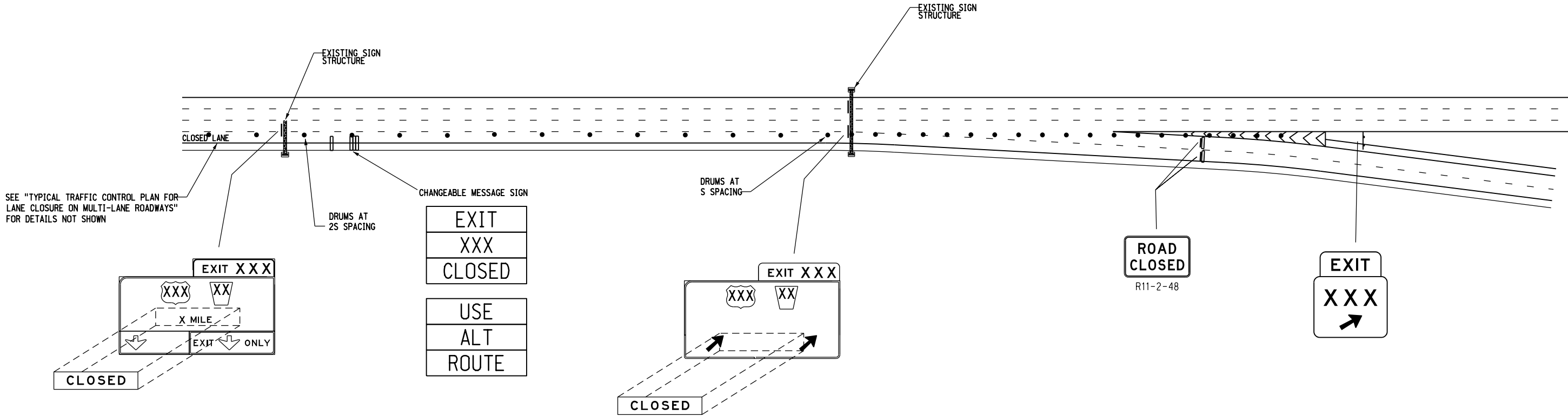
### LEGEND

- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- SIGN
- FLASHING ARROW PANEL
- REFLECTORIZED PLASTIC DRUM OR 42" REFLECTORIZED CONE

## Work in Vicinity of On Ramp



NEBRASKA DEPARTMENT OF TRANSPORTATION				
TRAFFIC ENGINEERING DIVISION				
TYPICAL TRAFFIC CONTROL PLAN				
DESIGNED	TJF	WORK IN VICINITY OF EXIT / ON RAMP INTERSTATE / EXPRESSWAY		
REVIEWED				
APPROVED		DATE DRAWN	TRAFFIC ENGINEER	DATE
		10/12		



## NOTES

- EXISTING SIGNS DO NOT NEED TO BE COVERED OR OVERLAYED FOR SHORT DURATION (48 HOURS OR LESS) RAMP CLOSURES.
- TEMPORARY GUIDE SIGNS MAY NEED TO BE UTILIZED FOR LONG TERM RAMP CLOSURES.

## TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

$L = \frac{WS^2}{60}$  FOR SPEEDS OF 40 MPH OR LESS.

WHERE:

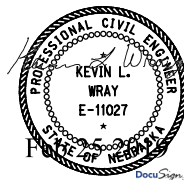
L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK IN MPH.

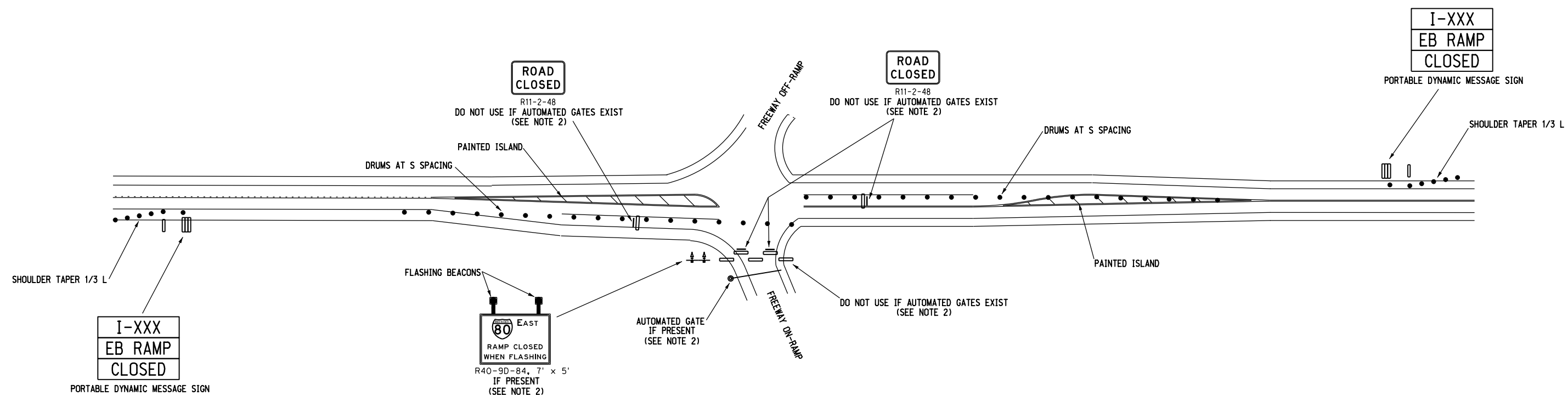
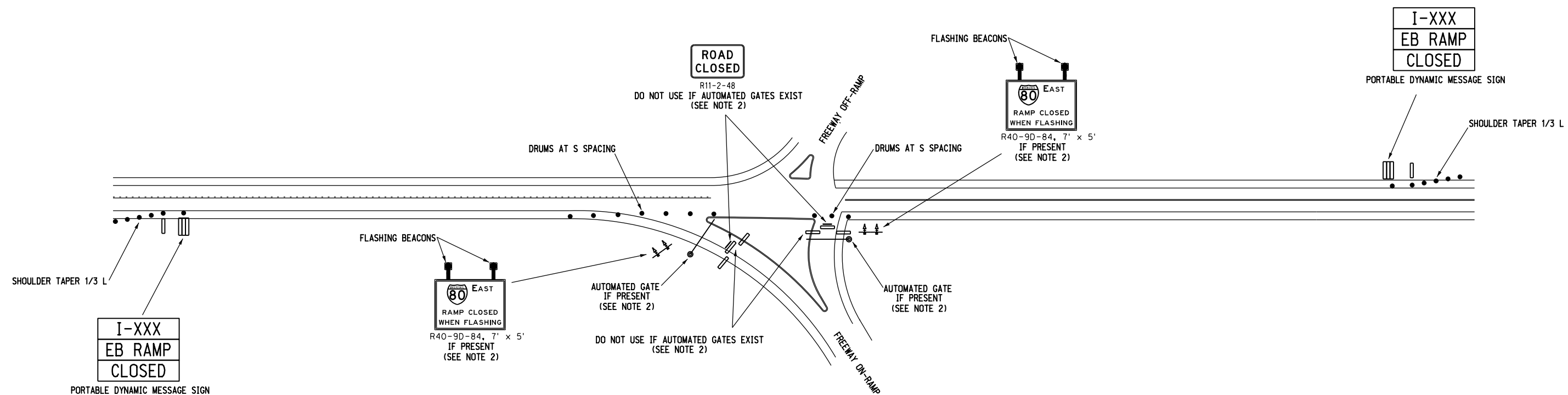
W = WIDTH OF OFFSET (LANE WIDTH) IN FEET.

## LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- CHANGEABLE MESSAGE SIGN
- SIGN



NEBRASKA DEPARTMENT OF TRANSPORTATION TRAFFIC ENGINEERING DIVISION				
TYPICAL TRAFFIC CONTROL PLAN				
DESIGNED	KSF	FREeway OFF-RAMP CLOSURE		1/1
REVIEWED				
APPROVED	DATE DRAWN 07/13	TRAFFIC ENGINEER	DATE	



### GENERAL NOTES

- EXISTING SIGNS THAT ARE NOT APPLICABLE SHALL BE COVERED DURING THE CLOSURE.
- IF AUTOMATED GATES AND "I-80 EAST/WEST RAMP CLOSED WHEN FLASHING" SIGNS (R40-9D-84) WITH FLASHING BEACONS ARE PRESENT, THE "ROAD CLOSED" SIGNS (R11-2-48) AND TYPE III BARRICADES ARE NOT NECESSARY.

### TAPER FORMULA

$L = S \times W$  FOR SPEEDS OF 45 MPH OR MORE.

$L = \frac{WS^2}{60}$  FOR SPEEDS OF 40 MPH OR LESS.

WHERE:

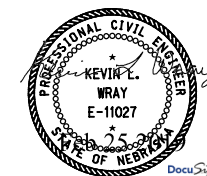
L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK IN MPH.

W = WIDTH OF OFFSET (LANE WIDTH) IN FEET.

### LEGEND

- SIGN
- ⚡⚡ DOUBLE POST SIGN WITH FLASHING BEACONS
- ⊙ AUTOMATED GATE
- ▮ TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- ▮ PORTABLE DYNAMIC MESSAGE SIGN (PDMS)



NEBRASKA DEPARTMENT OF TRANSPORTATION TRAFFIC ENGINEERING DIVISION				
TYPICAL TRAFFIC CONTROL PLAN				
DESIGNED	KSF	FREeway ON-RAMP CLOSURE		1/1
REVIEWED				
APPROVED		DATE DRAWN 02/18	TRAFFIC ENGINEER	DATE

ROADWAY DESIGN DIVISION

Computer: DROESIGN147

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SHEET 1 OF 3

## CHANNELIZATION DEVICES

THE FUNCTION OF CHANNELIZATION DEVICES IS TO WARN ROAD USERS OF CONDITIONS CREATED BY WORK ACTIVITIES IN OR NEAR THE TRAVELED WAY, TO PROTECT WORKERS IN THE TEMPORARY TRAFFIC CONTROL ZONE, AND TO GUIDE DRIVERS AND PEDESTRIANS SAFELY. CHANNELIZING DEVICES INCLUDE BUT ARE NOT LIMITED TO CONES, TUBULAR POSTS, VERTICAL PANELS, DRUMS, BARRICADES, TRAFFIC LANE DIVIDERS, TEMPORARY RAISED ISLANDS, AND BARRIERS.

DEVICES USED FOR CHANNELIZATION SHOULD PROVIDE FOR SMOOTH AND GRADUAL TRAFFIC MOVEMENT FROM ONE LANE TO ANOTHER, ONTO A BYPASS OR DETOUR, OR TO REDUCE THE WIDTH OF THE TRAVELED WAY. THEY MAY ALSO BE USED TO SEPARATE TRAFFIC FROM THE WORK SPACE, PAVEMENT DROP-OFFS, PEDESTRIAN PATHS, OR OPPOSING DIRECTIONS OF TRAFFIC.

CHANNELIZING DEVICES SHALL MEET THE CRASHWORTHY PERFORMANCE CRITERIA CONTAINED IN THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH). THEY SHOULD BE CONSTRUCTED AND BALLASTED TO PERFORM IN A PREDICTABLE MANNER WHEN INADVERTENTLY STRUCK BY A VEHICLE. IF STRUCK, THE DEVICE SHOULD YIELD OR BREAK AWAY, FRAGMENTS OR OTHER DEBRIS FROM THE DEVICE SHOULD NOT PENETRATE THE PASSENGER COMPARTMENT OF THE VEHICLE OR BE A POTENTIAL HAZARD TO WORKERS OR PEDESTRIANS IN THE IMMEDIATE AREA.

SPACING OF CHANNELIZING DEVICES SHOULD NOT EXCEED A DISTANCE IN FEET EQUAL TO THE SPEED WHEN USED FOR THE TAPER CHANNELIZATION, AND A DISTANCE IN FEET OF TWICE THE SPEED WHEN USED FOR TANGENT CHANNELIZATION.

SPACING OF CHANNELIZATION DEVICES		
SPEED (MPH)	SPACING OF DEVICES (FEET)	
	TAPER	TANGENT
25	25	50
35	35	70
45	45	90
55	55	110
60	60	120
65	65	130
75	75	150

WARNING LIGHTS MAY BE ADDED TO CHANNELIZING DEVICES IN AREAS WITH FREQUENT FOG, SNOW, OR SEVERE ROADWAY CURVATURE, OR WHERE VISUAL DISTRACTIONS ARE PRESENT, EXCEPT FOR THE SEQUENTIAL FLASHING WARNING LIGHTS, WARNING LIGHTS PLACED ON CHANNELIZING DEVICES USED IN A SERIES TO CHANNELIZE ROAD USERS SHALL BE STEADY-BURN.

THE RETROREFLECTIVE MATERIAL USED ON CHANNELIZING DEVICES SHALL HAVE A SMOOTH, SEALED OUTER SURFACE, MEETING THE REQUIREMENTS OF THE ASTM SPECIFICATION D4956, FOR TYPE IV SHEETING OR TYPE V REBOUNDABLE SHEETING (OR GREATER).

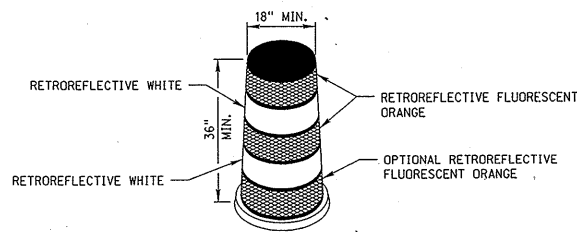
COEFFICIENT OF RETROREFLECTION (CD/LUX/M <sup>2</sup> )				
WHITE	ORANGE	RED	YELLOW	
250	100	45	170	

THE AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) "QUALITY GUIDELINES FOR WORK ZONE TRAFFIC CONTROL DEVICES" SHALL BE USED AS A VISUAL GUIDE FOR DETERMINING IF A TRAFFIC CONTROL DEVICE/OR SIGN IS ACCEPTABLE, MARGINAL OR UNACCEPTABLE.

THE NAME AND TELEPHONE NUMBER OF THE AGENCY, CONTRACTOR, OR SUPPLIER MAY BE SHOWN ON THE CHANNELIZING DEVICE BACK OR SUPPORT, BUT NOT ON THE DEVICE FACE. THE LETTERS AND NUMBERS SHALL BE A NON-REFLECTIVE COLOR AND NOT OVER 15 SQUARE INCHES IN TOTAL AREA.

PARTICULAR ATTENTION SHOULD BE GIVEN TO MAINTAINING THE CHANNELIZING DEVICES TO KEEP THEM CLEAN, VISIBLE, AND PROPERLY POSITIONED. DEVICES SHALL BE REPLACED THAT ARE DAMAGED AND/OR HAVE LOST A SIGNIFICANT AMOUNT OF THEIR RETROREFLECTIVITY AND EFFECTIVENESS.

## REFLECTORIZED PLASTIC DRUMS



### DESIGN

REFLECTORIZED PLASTIC DRUMS USED FOR TRAFFIC WARNING OR CHANNELIZATION SHALL BE CONSTRUCTED OF LIGHTWEIGHT, FLEXIBLE, AND DEFORMABLE MATERIALS AND BE A MINIMUM OF 36 INCHES IN HEIGHT AND HAVE A MINIMUM WIDTH OF AT LEAST A 18 INCHES, REGARDLESS OF ORIENTATION. THE PREDOMINANT COLOR OF THE DRUM SHALL BE ORANGE. METAL DRUMS SHALL NOT BE USED. THE MARKINGS ON DRUMS SHALL BE HORIZONTAL, SHALL BE CIRCUMFERENTIAL, AND SHALL DISPLAY FOUR 6 INCH WIDE BANDS OF RETROREFLECTIVE SHEETING, ALTERNATING FLUORESCENT ORANGE-WHITE-FLUORESCENT ORANGE-WHITE. DRUMS SHALL HAVE CLOSED TOPS THAT WILL NOT ALLOW COLLECTION OF CONSTRUCTION OR OTHER DEBRIS.

### APPLICATION

DRUMS ARE MOST COMMONLY USED TO CHANNELIZE OR DELINEATE TRAFFIC FLOW BUT MAY ALSO BE USED INDIVIDUALLY OR IN GROUPS TO MARK SPECIFIC LOCATIONS. DRUMS ARE HIGHLY VISIBLE AND HAVE GOOD TARGET VALUE; THEY GIVE THE APPEARANCE OF BEING FORMIDABLE OBSTACLES AND, THEREFORE, COMMAND THE RESPECT OF ROAD USERS.

BALLAST SHALL NOT BE PLACED ON TOP OF THE DRUM. DRUMS SHOULD NOT BE WEIGHTED WITH SAND, WATER, OR ANY MATERIAL.

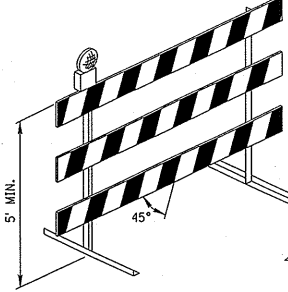
## BARRICADES

BARRICADE TYPE	TYPE II	TYPE III
WIDTH OF RAIL*	8 INCHES MIN. - 12 INCHES MAX.	8 INCHES MIN. - 12 INCHES MAX.
LENGTH OF RAIL	36 INCHES	8 FEET**
WIDTH OF STRIPES	6 INCHES	6 INCHES
HEIGHT	36 INCHES	5 FEET
REFLECTIVE SHEETING	TYPE IV	TYPE IV
NUMBER OF REFLECTORIZED RAIL FACES	4 (TWO EACH DIRECTION)	6 (THREE EACH DIRECTION)

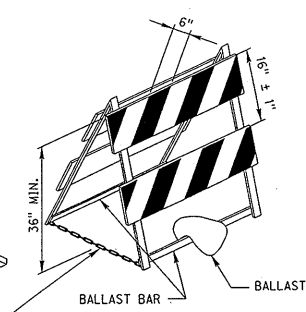
\*NOMINAL DIMENSIONS ARE PERMISSIBLE WHEN CONSTRUCTED FROM LUMBER.  
\*\*WHEN LATERAL SPACE IS LIMITED, SOME TYPE III BARRICADES WITH A 4 FOOT LENGTH OF RAIL, MAY BE ALLOWED WHEN APPROVED BY THE ENGINEER.

### TYPE III BARRICADE

TYPICAL MOUNTING OF FLASHING WARNING LIGHTS. LIGHTS SHALL ALWAYS BE IN VERTICAL ALIGNMENT.



### TYPE II BARRICADE



BALLAST SHALL NOT BE PLACED OVER ANY REFLECTIVE DEVICE

### DESIGN

A BARRICADE IS A PORTABLE OR FIXED DEVICE HAVING TWO OR THREE RAILS WITH APPROPRIATE MARKINGS. IT IS USED TO CONTROL ROAD USERS BY CLOSING, RESTRICTING, OR DELINEATING ALL OR A PORTION OF THE RIGHT-OF-WAY.

BARRICADES SHALL BE ONE OF TWO TYPES; TYPE II OR TYPE III.

STRIPES ON BARRICADE RAILS SHALL BE ALTERNATING ORANGE AND WHITE RETROREFLECTIVE STRIPES SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES IN THE DIRECTION ROAD USERS ARE TO PASS. THE STRIPES SHALL BE 6 INCHES WIDE. THE MINIMUM RAIL LENGTH FOR A TYPE II BARRICADE IS 36 INCHES.

WHERE BARRICADES EXTEND ENTIRELY ACROSS A ROADWAY, THE STRIPES SHOULD SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH ROAD USERS MUST TURN. WHERE BOTH RIGHT AND LEFT TURNS ARE PROVIDED, THE STRIPES MAY SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE OR BARRICADES. WHERE NO TURNS ARE INTENDED, THE STRIPES SHOULD SLOPE DOWNWARD TOWARD THE CENTER OF THE BARRICADE OR BARRICADES.

BARRICADE RAILS SHOULD BE SUPPORTED IN A MANNER THAT WILL ALLOW THEM TO BE SEEN BY THE ROAD USER, AND IN A MANNER THAT PROVIDES A STABLE SUPPORT THAT IS NOT EASILY BLOWN OVER OR DISPLACED.

ON HIGH-SPEED ROADWAYS OR IN OTHER SITUATIONS WHERE BARRICADES MAY BE SUSCEPTIBLE TO OVERTURNING THE WIND, SANDBAGS SHOULD BE USED FOR BALLASTING. SANDBAGS MAY BE PLACED ON LOWER PARTS OF THE FRAME OR STAYS TO PROVIDE THE REQUIRED BALLAST BUT SHALL NOT BE PLACED ON TOP OF ANY STRIPED RAIL. BARRICADES SHALL NOT BE BALLASTED BY HEAVY OBJECTS SUCH AS ROCKS OR CHUNKS OF CONCRETE.

THE BARRICADE OWNERS NAME, NOT TO EXCEED 15 SQUARE INCHES SHALL BE SHOWN ON THE BARRICADE BACK OR SUPPORT BUT NOT ON ITS FACE.

\*\* WHEN LATERAL SPACE IS LIMITED, SOME TYPE III BARRICADES WITH A 4 FOOT LENGTH OF RAIL, MAY BE ALLOWED WHEN APPROVED BY THE ENGINEER.

### APPLICATION

TYPE II BARRICADES ARE INTENDED FOR USE IN SITUATIONS WHERE TRAFFIC IS MAINTAINED THROUGH THE TEMPORARY TRAFFIC CONTROL ZONE. THEY MAY BE USED INDIVIDUALLY OR IN GROUPS TO MARK A SPECIFIC CONDITION, OR THEY MAY BE USED IN A SERIES FOR CHANNELIZING TRAFFIC. ON THE INTERSTATE, FREEWAY AND EXPRESSWAY SYSTEM, TYPE II BARRICADES SHALL NOT BE USED FOR CHANNELIZATION.

TYPE III BARRICADES USED AT A ROAD CLOSURE MAY EXTEND COMPLETELY ACROSS A ROADWAY FROM CURB TO CURB. WHERE PROVISION IS MADE FOR ACCESS OF AUTHORIZED EQUIPMENT AND VEHICLES, THE RESPONSIBILITY FOR THE TYPE III BARRICADES SHOULD BE ASSIGNED TO A PERSON WHO SHALL PROVIDE PROPER CLOSURE AT THE END OF EACH WORK DAY.

WHEN A HIGHWAY IS LEGALLY CLOSED BUT ACCESS MUST STILL BE ALLOWED FOR LOCAL TRAFFIC, THE TYPE III BARRICADES MAY NOT BE EXTENDED COMPLETELY ACROSS A ROADWAY. A SIGN WITH THE APPROPRIATE LEGEND CONCERNING PERMISSIBLE USE BY LOCAL TRAFFIC SHALL BE MOUNTED.

NORMALLY PERMANENT SIGNS MOUNTED ON BARRICADES SHALL BE ERECTED ABOVE THE BARRICADE. THE SIGNS "ROAD CLOSED", OR "ROAD WORK AHEAD", FOR EXAMPLE CAN EFFECTIVELY BE MOUNTED ABOVE THE BARRICADE THAT CLOSSES THE ROADWAY. TYPE III BARRICADES SHALL BE SUPPLEMENTED WITH A LIGHTING DEVICE UNLESS SPECIFICALLY OMITTED BY THE ENGINEER. DETOUR ARROW AND LARGE WARNING ARROW SIGNS SHOULD BE PLACED ON THE FACE OF BARRICADE.

## CONES



### DESIGN

CONES SHALL BE PREDOMINANTLY ORANGE, FLOURESCENT RED-ORANGE, OR FLOURESCENT YELLOW/ORANGE, NOT LESS THAN 28 INCHES IN HEIGHT, AND SHALL BE MADE OF A MATERIAL THAT CAN BE STRUCK WITHOUT DAMAGING VEHICLES ON IMPACT. CONES WHEN ALLOWED ON THE INTERSTATE, FREEWAY OR EXPRESSWAY SYSTEM SHALL BE A MINIMUM OF 36 INCHES IN HEIGHT.

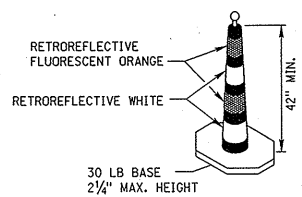
FOR NIGHTTIME USE, CONES SHALL BE RETROREFLECTIVE OR EQUIPPED WITH LIGHTING DEVICES FOR MAXIMUM VISIBILITY. RETROREFLECTION OF 28 INCH OR 36 INCH CONES SHALL BE PROVIDED BY A WHITE BAND 6 INCHES WIDE, NO MORE THAN 4 INCHES FROM THE TOP OF THE CONE, AND AN ADDITIONAL 4 INCH WIDE WHITE BAND A MINIMUM OF 2 INCHES BELOW THE 6 INCH BAND.

### APPLICATION

TRAFFIC CONES ARE USED TO CHANNELIZE TRAFFIC, DIVIDE OPPOSING TRAFFIC LANES, DIVIDE TRAFFIC LANES WHEN TWO OR MORE LANES ARE KEPT OPEN IN THE SAME DIRECTION, AND DELINEATE SHORT-DURATION MAINTENANCE AND UTILITY WORK. CONES SHALL NOT BE USED FOR LANE CLOSURE TAPERS OR SHIFTS, CONES SMALLER THAN 42 INCHES SHALL NOT BE USED AT NIGHT ON RURAL HIGHWAYS, UNLESS SHOWN ON THE PLANS OR AS APPROVED OR DIRECTED BY THE ENGINEER.

STEPS SHOULD BE TAKEN TO ENSURE THAT CONES WILL NOT BE BLOWN OVER OR DISPLACED BY WIND OR MOVING TRAFFIC. CONES CAN BE DOUBLED UP TO INCREASE THEIR WEIGHT. SOME CONES ARE CONSTRUCTED WITH BASES THAT CAN BE FILLED WITH BALLAST. OTHERS HAVE SPECIAL WEIGHTED BASES, OR WEIGHTS SUCH AS SANDBAG RINGS THAT CAN BE DROPPED OVER THE CONES AND ONTO THE BASE TO PROVIDE ADDED STABILITY. BALLAST, HOWEVER, SHOULD NOT PRESENT A HAZARD IF THE CONES ARE INADVERTENTLY STRUCK.

## 42 INCH CONES



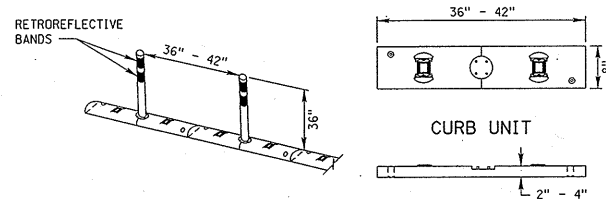
### DESIGN

42 INCH CONES SHALL INCLUDE A 30 POUND RUBBER BASE AND DISPLAY FOUR 6 INCH WIDE BANDS OF RETROREFLECTIVE SHEETING, ALTERNATING FLUORESCENT ORANGE-WHITE-FLUORESCENT ORANGE-WHITE.

### APPLICATION

WHEN APPROVED BY THE ENGINEER OR SHOWN IN THE PLANS, 42 INCH REFLECTIVE CONES MAY BE USED IN LIEU OF TYPE II BARRICADES OR REFLECTORIZED DRUMS. 42 INCH CONES SHALL NOT BE USED FOR LANE-CLOSURE TAPERS OR SHIFTS. IF A RECTANGULAR BASE IS USED, THE LONG SIDE OF THE BASE SHOULD BE ORIENTED PARALLEL TO THE DIRECTION OF TRAFFIC.

## TUBULAR POST AND CURB SYSTEM



### DESIGN

TUBULAR POSTS USED IN THE SYSTEM SHALL BE 36 INCHES HIGH AND A MINIMUM OF 2 INCHES WIDE WHEN FACING TRAFFIC. THE TUBULAR POST AND CURB SYSTEM SHALL BE MADE OF A MATERIAL THAT CAN BE STRUCK WITHOUT DAMAGING IMPACTING VEHICLES. THE COLOR SHALL BE AS SHOWN IN THE PLANS.

THE TUBULAR POSTS SHALL BE RETROREFLECTIVE. RETROREFLECTION OF TUBULAR POSTS SHALL BE PROVIDED BY TWO 3-INCH WIDE RETROREFLECTIVE BANDS PLACED A MAXIMUM OF 2 INCHES FROM THE TOP WITH A MAXIMUM OF 6 INCHES BETWEEN THE BANDS. EACH CURB SECTION SHALL CONTAIN ONE RETROREFLECTIVE MARKER FACING EACH DIRECTION OF TRAFFIC. THE COLOR OF THE RETROREFLECTIVE BANDS AND MARKERS SHALL MATCH THE POST/CURB COLOR.

THE CURB SECTIONS SHALL BE CONFIGURED TO ALLOW FOR DRAINAGE FROM THE PAVEMENT SURFACE.

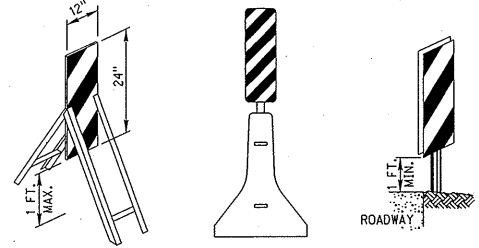
### APPLICATION

TUBULAR POST AND CURB SYSTEMS MAY BE USED TO DIVIDE OPPOSING LANES OF TRAFFIC OR TO DIVIDE TRAFFIC LANES WHEN TWO OR MORE LANES ARE KEPT OPEN IN THE SAME DIRECTION.

FASTENING THE CURBS TO THE PAVEMENT WITH ANCHOR BOLTS OR OTHER SUITABLE METHODS AS DIRECTED BY THE MANUFACTURER IS REQUIRED TO MINIMIZE THE CHANCE OF BEING MOVED BY TRAFFIC.

TUBULAR POST AND CURB SYSTEMS SHALL BE INSTALLED IN THE LOCATIONS SHOWN IN THE PLANS OR DIRECTED BY THE ENGINEER.

## VERTICAL PANELS



### DESIGN

RETROREFLECTIVE MATERIAL ON VERTICAL PANELS SHALL BE 12 INCHES WIDE AND AT LEAST 24 INCHES HIGH. THEY SHALL HAVE ALTERNATING ORANGE AND WHITE STRIPES, WHERE THE HEIGHT OF THE RETROREFLECTIVE MATERIAL ON THE VERTICAL PANEL IS MORE THAN 36 INCHES, A PANEL STRIPE WIDTH OF 6 INCHES SHALL BE USED. WHERE THE HEIGHT OF THE RETROREFLECTIVE MATERIAL ON THE VERTICAL PANEL IS 36 INCHES OR LESS, A PANEL STRIPE WIDTH OF 4 INCHES SHALL BE USED. IF USED FOR TWO-WAY TRAFFIC, BACK-TO-BACK PANELS SHALL BE USED.

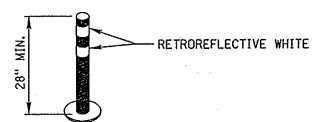
MARKINGS FOR VERTICAL PANELS SHALL BE ALTERNATING ORANGE AND WHITE RETROREFLECTORIZED STRIPES SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES IN THE DIRECTION TRAFFIC IS TO PASS.

POST MOUNTED VERTICAL PANELS SHALL BE MOUNTED WITH THE BOTTOM A MINIMUM OF 1 FOOT ABOVE THE ROADWAY. VERTICAL PANELS ON A TEMPORARY STAND SHALL BE MOUNTED WITH THE BOTTOM A MAXIMUM OF 1 FOOT ABOVE THE ROADWAY.

### APPLICATION

WHERE SPACE IS LIMITED VERTICAL PANELS MAY BE USED TO CHANNEL TRAFFIC, DIVIDE OPPOSING LANES OF TRAFFIC, DIVIDE TRAFFIC LANES OR REPLACE BARRICADES. WHEN APPROVED BY THE ENGINEER, VERTICAL PANELS MAY BE POST-MOUNTED ALONG THE SIDE OF THE ROADWAY.

## TUBULAR POSTS



### DESIGN

TUBULAR POSTS SHALL BE PREDOMINANTLY ORANGE, NOT LESS THAN 28 INCHES HIGH, BE A MINIMUM OF 2 INCHES WIDE WHEN FACING TRAFFIC, AND MADE OF A MATERIAL THAT CAN BE STRUCK WITHOUT DAMAGING IMPACTING VEHICLES.

TUBULAR POSTS SHALL BE RETROREFLECTIVE. RETROREFLECTION OF TUBULAR POSTS SHALL BE PROVIDED BY TWO 3 INCHES WIDE WHITE BANDS PLACED A MAXIMUM OF 2 INCHES FROM THE TOP, WITH A MAXIMUM OF 6 INCHES BETWEEN THE BANDS. THE BASE SHALL NOT BE WIDER THAN 12 INCHES OR HIGHER THAN 2 INCHES.

### APPLICATION

TUBULAR POSTS HAVE LESS VISIBLE AREA THAN OTHER DEVICES AND SHOULD BE USED ONLY WHERE SPACE RESTRICTIONS DO NOT ALLOW FOR THE USE OF OTHER MORE VISIBLE DEVICES. THEY MAY BE USED EFFECTIVELY TO DIVIDE OPPOSING LANES OF TRAFFIC OR TO DIVIDE TRAFFIC LANES WHEN TWO OR MORE LANES ARE KEPT OPEN IN THE SAME DIRECTION.

STEPS SHOULD BE TAKEN TO ASSURE THAT TUBULAR POSTS WILL NOT BE BLOWN OVER OR DISPLACED BY TRAFFIC BY EITHER AFFIXING THEM TO THE PAVEMENT WITH ANCHOR BOLTS OR ADHESIVE, IF A NONCYLINDRICAL DEVICE IS USED, IT SHALL BE ATTACHED TO THE PAVEMENT TO ENSURE THAT THE WIDTH FACING TRAFFIC MEETS THE MINIMUM REQUIREMENTS.

TUBULAR POSTS SHOULD NOT BE USED FOR PEDESTRIAN CHANNELIZATION OR A PEDESTRIAN BARRIERS IN TEMPORARY TRAFFIC CONTROL ZONES ON OR ALONG SIDEWALKS.

R7	JAN 18	NDOR BORDER TO NDOT BORDER
R6	JUN 14	2009 MUTCD UPDATE
R5	OCT 98	REVISE CHANNELIZATION DEVICES, TAPER
REV. NO.	DATE	DESCRIPTION OF REVISION

NEBRASKA DEPARTMENT OF TRANSPORTATION  
STANDARD PLAN NO. 920-R7  
**TRAFFIC CONTROL,  
CONSTRUCTION AND MAINTENANCE**

ACCEPTED BY FHWA FOR USE ON THE  
NATIONAL HIGHWAY SYSTEM:

*David Mear*  
9-1-2017  
DATE

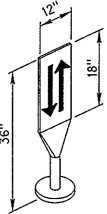
DANIEL J. WADDLE  
E-6289  
STATE OF NEBRASKA

ORIGINAL:  
OCTOBER 1998  
DATE

1  
3



OPPOSING TRAFFIC LANE DIVIDERS



DESIGN

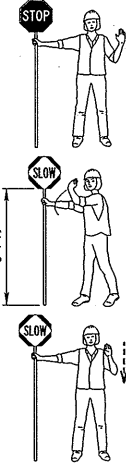
OPPOSING TRAFFIC LANE DIVIDERS SHALL BE A TWO SIDED UPRIGHT RETROREFLECTORIZED ORANGE PANEL, WITH A WIDTH OF 12 INCHES AND A HEIGHT OF 18 INCHES. THE TOP OF THE PANEL SHALL BE 36 INCHES ABOVE THE PAVEMENT. THE SYMBOL ON EACH SIDE SHALL BE TWO OPPOSING BLACK ARROWS. THE LANE DIVIDER SHALL BE MADE OF LIGHTWEIGHT MATERIAL THAT WILL YIELD UPON IMPACT BY A VEHICLE. THE LANE DIVIDER BASE SHALL NOT BE WIDER THAN 12 INCHES OR HIGHER THAN 4 INCHES. THE BASE SHALL BE ATTACHED TO THE EXISTING SURFACE BY EPOXY OR OTHER SUITABLE ADHESIVE, TO ENSURE THAT THE PANEL REMAINS FACING TRAFFIC.

APPLICATION

OPPOSING TRAFFIC LANE DIVIDERS ARE DELINEATION DEVICES USED AS CENTER LANE DIVIDERS TO SEPARATE OPPOSING TRAFFIC ON A TWO-LANE, TWO-WAY OPERATION.

FLAGGERS

REQUIRED METHOD



TO STOP TRAFFIC

TRAFFIC PROCEED

TO ALERT AND SLOW TRAFFIC

EMERGENCY USE ONLY



FLAGGER PADDLE

THE STOP/SLOW PADDLE SHALL HAVE AN OCTAGONAL SHAPE ON A RIGID HANDLE. STOP/SLOW PADDLES SHALL BE AT LEAST 18 INCHES WIDE WITH LETTERS AT LEAST 6 INCHES HIGH. IF THE STOP/SLOW PADDLE IS PLACED ON A RIGID STAFF, THE MINIMUM LENGTH OF THE STAFF, MEASURED FROM THE BOTTOM OF THE SIGN TO THE END OF THIS STAFF THAT RESTS ON THE GROUND, SHOULD BE 5 FEET. THE STOP/SLOW PADDLE SHOULD BE THE PRIMARY AND PREFERRED HAND-SIGNALING DEVICE BECAUSE THE STOP/SLOW PADDLE GIVES ROAD USERS MORE POSITIVE GUIDANCE THAN RED FLAGS. USE OF FLAGS SHOULD BE LIMITED TO EMERGENCY SITUATIONS.

FLAGGERS

A FLAGGER MUST BE DRESSED FOR SAFETY. IN ADDITION TO THE REQUIREMENTS OF THE "WORKER VISIBILITY" SECTION LISTED BELOW, FLAGGERS SHALL WEAR:

1. AN ORANGE OR YELLOW/GREEN CAP OR HARD HAT.
2. A SHIRT WITH SLEEVES, PANTS AND SHOES (TANK TOPS, SHORTS OR SANDALS SHALL NOT BE WORN).

FLAGGERS SHALL BE INSTRUCTED IN THE PROPER LOCATION, DUTIES AND PROCEDURES FOR FLAGGING AS OUTLINED IN THE CURRENT MUTCD AND THE DEPARTMENT OF ROADS FLAGGER'S HANDBOOK. AS REQUIRED BY THE DEPARTMENT OF ROADS, THE FLAGGER SHALL BE CERTIFIED, AND HAVE IN THEIR POSSESSION, A VALID FLAGGER CERTIFICATION CARD.

WORKER VISIBILITY

ALL WORKERS WITHIN THE RIGHT-OF-WAY WHO ARE EXPOSED EITHER TO TRAFFIC (VEHICLES USING THE HIGHWAY FOR PURPOSES OF TRAVEL) OR TO CONSTRUCTION EQUIPMENT WITHIN THE WORK AREA SHALL WEAR HIGH-VISIBILITY SAFETY APPAREL. HIGH-VISIBILITY SAFETY APPAREL IS DEFINED TO MEAN PERSONAL PROTECTIVE SAFETY CLOTHING THAT:

1. IS INTENDED TO PROVIDE CONSPICUITY DURING BOTH DAYTIME AND NIGHTTIME USAGE, AND
2. MEETS THE PERFORMANCE CLASS 2 OR CLASS 3 REQUIREMENTS OF THE ANSI/ISEA 107-2004 PUBLICATION ENTITLED "AMERICAN NATIONAL STANDARDS FOR HIGH-VISIBILITY SAFETY APPAREL AND HEADWEAR"

LIGHTING DEVICES

FUNCTION

CONSTRUCTION AND MAINTENANCE ACTIVITIES OFTEN CREATE CONDITIONS ON OR NEAR THE TRAVELED WAY THAT ARE PARTICULARLY HAZARDOUS AT NIGHT. IT IS OFTEN DESIRABLE AND NECESSARY TO SUPPLEMENT THE REFLECTORIZED SIGNS, BARRIERS, AND CHANNELIZING DEVICES WITH LIGHTING DEVICES. STROBE TYPE LIGHTS ARE NOT PERMITTED.

BARRICADE WARNING LIGHTS DESIGN (BATTERY OPERATED)

TYPE "A" LOW INTENSITY FLASHING WARNING LIGHTS ARE MOST COMMONLY MOUNTED ON BARRICADES, OR WITH SIGNS AND ARE INTENDED TO WARN THE DRIVER THAT THEY ARE PROCEEDING IN A HAZARDOUS AREA. THESE LIGHTS SHALL NOT BE USED FOR DELINEATION, AS A SERIES OF FLASHING LIGHTS IN A ROW WOULD TEND TO OBSCURE THE DESIRED PATH.

TYPE "A" HIGH INTENSITY FLASHING WARNING LIGHTS ARE NORMALLY MOUNTED ON THE TYPE III BARRICADE THAT ACCOMPANIES THE ADVANCE WARNING SIGNS.

TYPE "C" STEADY BURN LIGHTS AS USED HEREIN, SHALL MEAN A SERIES OF LOW WATTAGE YELLOW ELECTRIC LIGHTS. WHERE LIGHTS ARE NEEDED TO DELINEATE OR MARK THE TRAVELED WAY THROUGH AND AROUND OBSTRUCTIONS IN A CONSTRUCTION MAINTENANCE AREA, THE DELINEATION SHALL BE ACCOMPLISHED BY USE OF STEADY BURNING LIGHTS. WHEN USED TO SUPPLEMENT CHANNELIZATION, THE MAXIMUM SPACING FOR WARNING LIGHTS SHOULD BE IDENTICAL TO THE CHANNELIZING DEVICE SPACING REQUIREMENTS. WHEN USED TO DELINEATE A CURVE, TYPE "C" WARNING LIGHTS SHOULD ONLY BE USED ON DEVICES ON THE OUTSIDE OF THE CURVE, AND NOT ON THE INSIDE OF THE CURVE.

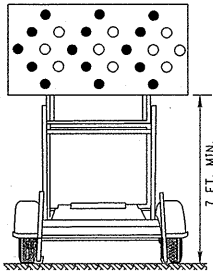
FLASHING ARROW PANEL (DISPLAY)

AN ARROW PANEL IS A SIGN WITH A MATRIX OF ELEMENTS, CAPABLE OF EITHER FLASHING OR SEQUENTIAL DISPLAYS. THIS SIGN SHALL PROVIDE ADDITIONAL WARNING AND DIRECTIONAL INFORMATION TO ASSIST IN MERGING AND CONTROLLING ROAD USERS THROUGH OR AROUND A TEMPORARY TRAFFIC CONTROL ZONE. AN ARROW PANEL SHOULD BE USED IN COMBINATION WITH APPROPRIATE SIGNS, CHANNELIZING DEVICES OR OTHER TRAFFIC CONTROL DEVICES.

DESIGN

ARROW PANELS SHALL MEET THE SIZE AND SPECIFICATIONS OF THE MUTCD FOR TYPE "C" ARROW DISPLAYS.

FLASHING ARROW PANEL SHALL BE RECTANGULAR, OF SOLID APPEARANCE AND FINISHED IN NON-REFLECTIVE BLACK. THE PANEL SHALL BE MOUNTED ON A VEHICLE, TRAILER OR OTHER SUITABLE SUPPORT. MINIMUM MOUNTING HEIGHT MEASURED VERTICALLY FROM THE BOTTOM OF THE PANEL TO THE ROADWAY BELOW IT OR TO THE ELEVATION OF THE NEAR EDGE OF THE ROADWAY, SHALL BE 7 FEET EXCEPT ON VEHICLE-MOUNTED PANELS, WHICH SHOULD BE AS HIGH AS PRACTICAL.



THE FOLLOWING SELECTIONS SHALL BE PROVIDED ON THE ARROW PANEL	
OPERATING MODE	PANEL DISPLAY
FLASHING ARROW	RIGHT SHOWN; LEFT OPPOSITE
SEQUENTIAL ARROW	RIGHT SHOWN; LEFT OPPOSITE
SEQUENTIAL CHEVRON	RIGHT SHOWN; LEFT OPPOSITE
FLASHING DOUBLE ARROW	RIGHT SHOWN; LEFT OPPOSITE
FLASHING OR ALTERNATING CAUTION	OR  OR  ALTERNATING DIAMOND CAUTION

THE ARROW PANEL SHALL HAVE A MINIMUM SIZE OF 96 INCHES WIDE AND 48 INCHES HIGH. THE MINIMUM LEGIBILITY DISTANCE SHALL BE 1 MILE. THE PANEL SHALL CONTAIN 25 LAMP ELEMENTS. ARROW PANEL ELEMENTS SHALL BE CAPABLE OF A MINIMUM 50 PERCENT DIMMING, AUTOMATICALLY WHEN AMBIENT LIGHT FALLS BELOW 50 LUX.

THE MINIMUM ELEMENT "ON TIME" SHALL BE 50 PERCENT FOR THE FLASHING MODE AND EQUAL INTERVALS OF 25 PERCENT FOR EACH SEQUENTIAL CHEVRON PHASE. THE FLASHING RATE SHALL BE NO FEWER THAN 25 NOR MORE THAN 40 FLASHES PER MINUTE.

APPLICATION

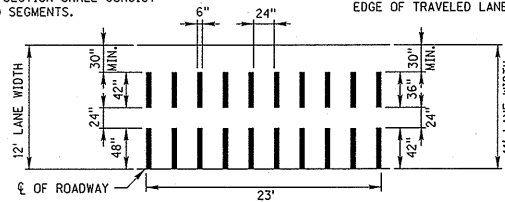
A FLASHING ARROW OR SEQUENTIAL CHEVRON MODE SHALL ONLY BE USED FOR STATIONARY OR MOVING LANE CLOSURES.

FOR SHOULDER WORK BLOCKING THE SHOULDER, FOR ROADSIDE WORK NEAR THE SHOULDER, OR FOR TEMPORARILY CLOSING ONE LANE ON A TWO-LANE, TWO-WAY ROADWAY, AN ARROW PANEL SHALL BE USED ONLY IN THE CAUTION MODE.

AN ARROW DISPLAY MODE SHALL NOT BE USED ON A TWO-LANE TWO-WAY ROADWAY FOR TEMPORARY ONE-LANE OPERATION OR LANE SHIFTS. AN ARROW DISPLAY SHALL NOT BE USED TO LATERALLY SHIFT TRAFFIC.

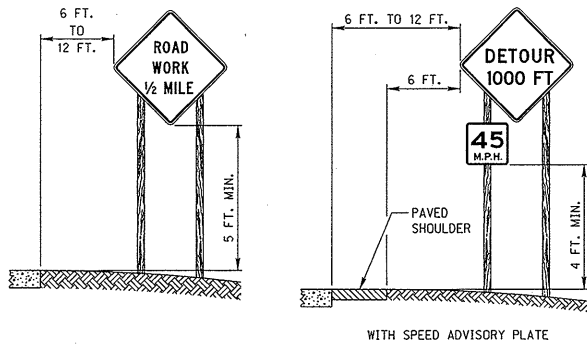
TEMPORARY RUMBLE STRIPS

EACH SECTION SHALL CONSIST OF 10 SEGMENTS.

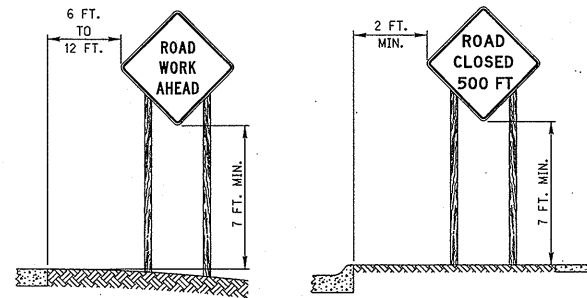




ROADSIDE SIGNS  
HEIGHT AND LATERAL LOCATION OF SIGNS  
RURAL AREA



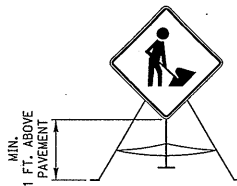
URBAN AREA



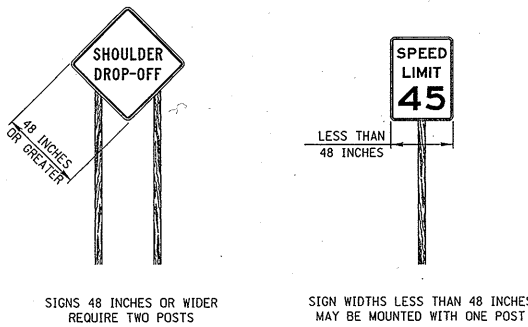
TYPICAL FIRST SIGN AT  
CONSTRUCTION SITE



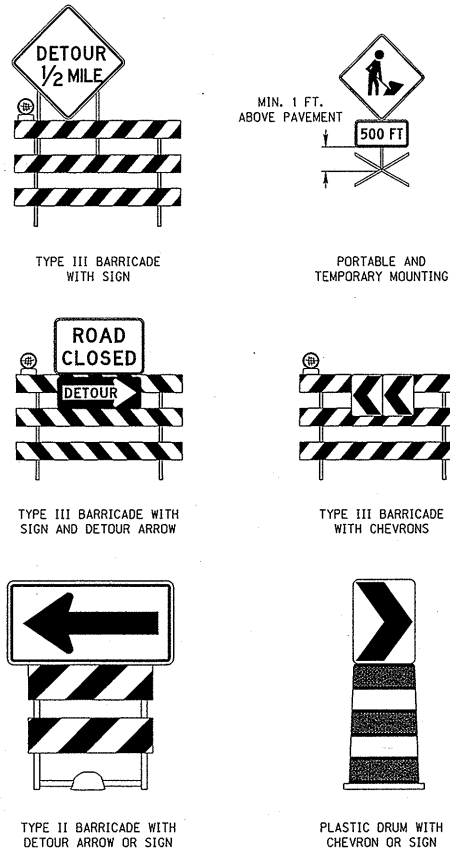
PORTABLE AND  
TEMPORARY MOUNTING



TYPICAL SIGN MOUNTINGS  
POST MOUNTED



TYPICAL SIGN MOUNTINGS  
OTHER THAN POST MOUNTED



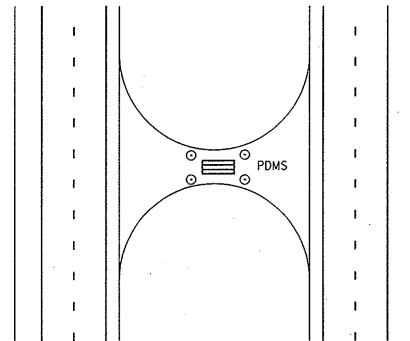
TEMPORARY SIGN SUPPORTS

ALL "TEMPORARY SIGN" SUPPORTS (BASES) SHALL BE NCHRP 350 OR MASH (TL-3) APPROVED.

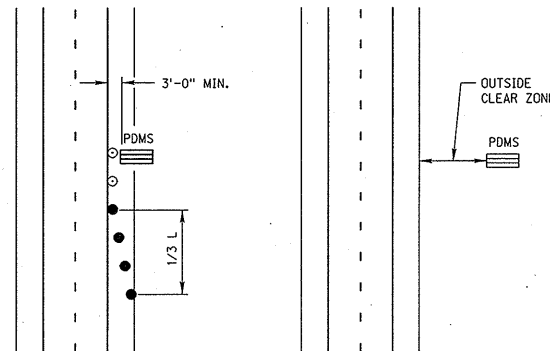
"TEMPORARY SIGNS" ARE ALL TEMPORARILY MOUNTED WORK ZONE SIGNS THAT ARE NOT POST MOUNTED IN THE GROUND AT THE TYPICAL 5 FOOT MOUNTING HEIGHT. TEMPORARY SIGNS ARE CONSIDERED NCHRP 350 OR MASH CATEGORY 2 DEVICES AND ARE MOUNTED ON TEMPORARY SIGN STANDS. TEMPORARY SIGNS SHALL BE MOUNTED A MINIMUM OF 1 FOOT ABOVE THE GROUND, UNLESS OTHERWISE REQUIRED TO BE MOUNTED AT A HIGHER HEIGHT.

TEMPORARY SIGNS AND THEIR SUPPORTS SHALL NOT BE IN PLACE LONGER THAN 3 DAYS. ANY SIGN THAT IS TO BE IN PLACE LONGER THAN 3 DAYS SHALL BE POST MOUNTED OR MOUNTED TO A DRUM, BARRICADE, OR BARRIER, AS REQUIRED BY THE PLANS OR SPECIFICATIONS.

PORTABLE DYNAMIC MESSAGE SIGN DELINEATION



IN MEDIAN



ON SHOULDER

OFF SHOULDER

PORTABLE DYNAMIC MESSAGE SIGNS (PDMS)

THE PLACEMENT OF PDMS SHOULD BE IN THE FOLLOWING ORDER:

WHENEVER POSSIBLE, PDMS SHOULD BE PLACED OFF OF ANY USABLE PORTION OF THE ROADWAY ON THE RIGHT SIDE OF THE ROADWAY. WHEN PLACED OUTSIDE THE CLEAR ZONE OR BEHIND GUARDRAIL OR CONCRETE PROTECTION BARRIERS, DELINEATION IS NOT REQUIRED.

WHERE FIELD CONDITIONS DO NOT ALLOW FOR THIS PLACEMENT, THE SIGNS MAY BE LOCATED ON THE OUTSIDE SHOULDER OF THE ROADWAY OR WITHIN THE MEDIAN.

A. A MINIMUM CLEARANCE OF 3 FEET MEASURED HORIZONTALLY FROM THE EDGE OF THE SIGN TO THE EDGE OF THE TRAVELED WAY IS RECOMMENDED.

B. THE PDMS SHOULD HAVE A MINIMUM MOUNTED HEIGHT OF 7 FEET ON FREEWAYS, EXPRESSWAYS AND IN URBAN AREAS.

C. ALL OTHER RURAL APPLICATIONS SHOULD HAVE A MINIMUM HEIGHT OF 5 FEET.

THESE HEIGHTS ARE MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE ELEVATION OF THE NEAR EDGE OF THE PAVEMENT.

REFLECTORIZED PLASTIC DRUMS SHOULD BE USED TO DELINEATE EACH SIGN USING A 1/3 L TAPER. THESE DRUMS SHOULD BE POSITIONED ON THE UPSTREAM END OF THE SIGN TO FORM A TAPER LEADING UP TO THE TRAFFIC SIDE OF THE SIGN. FOR A SIGN LOCATED IN THE MEDIAN, THE SIGN SHOULD BE DELINEATED WITH A 42 INCH CONE ON ALL FOUR CORNERS.

WHEN DEPLOYED, THE SIGN SHALL BE SIGHTED AND ALIGNED WITH APPROACHING TRAFFIC TO ENSURE VISIBILITY OF THE MESSAGE. IF MULTIPLE SIGNS ARE USED, THE SIGNS SHOULD BE LOCATED ON THE SAME SIDE OF THE ROAD AND SEPARATED ACCORDING TO PROPER SIGN SPACING.

WHEN PRACTICAL, PDMS SHOULD NOT BE USED TO REPLACE STATIC SIGNS FOR LONG TERM USAGE (OVER 10 DAYS).

WHEN PDMS ARE TO BE DEPLOYED FOR LONG PERIODS, SUCH AS INCIDENT MANAGEMENT ROLES, CONCRETE PADS WITH APPROPRIATE TIE DOWNS SHOULD BE CONSTRUCTED FOR THEIR PLACEMENT.

PDMS NOT ACTIVELY BEING USED IN A CONSTRUCTION OR INCIDENT MANAGEMENT ROLE SHOULD BE REMOVED.

REFER TO NDOR "DMS GUIDELINES" FOR PROPER PDMS MESSAGE INFORMATION.

NOTES

- ALL TRAFFIC CONTROL DEVICES SHALL MEET THE APPLICABLE STANDARDS AND SPECIFICATIONS PRESCRIBED IN PART 6 OF THE LATEST ADOPTED EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (MUTCD)" AND THE STATE OF NEBRASKA SUPPLEMENT TO THE MUTCD. ALL TRAFFIC CONTROL DEVICES SHALL BE CRASHWORTHY AND QUALIFY AS SUCH ACCORDING TO THE TESTING AND ACCEPTANCE GUIDELINES OF THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
- TRAFFIC CONTROL PLANS AND DEVICES SHOULD FOLLOW THE PRINCIPLES SET FORTH, BUT MAY DEViate FROM THE TYPICAL DRAWINGS TO ALLOW FOR CONDITIONS AND REQUIREMENTS OF THE PROJECT.
- TRAFFIC CONTROL DEVICES SHALL BE INSTALLED SO AS NOT TO OBSTRUCT THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
- THE ENGINEER SHALL HAVE THE AUTHORITY TO REQUIRE THE USE, AND APPROVE THE LOCATION OF ANY OF THE DEVICES SHOWN IN THESE PLANS.

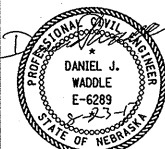
WORK ZONE SPEED LIMIT NOTES

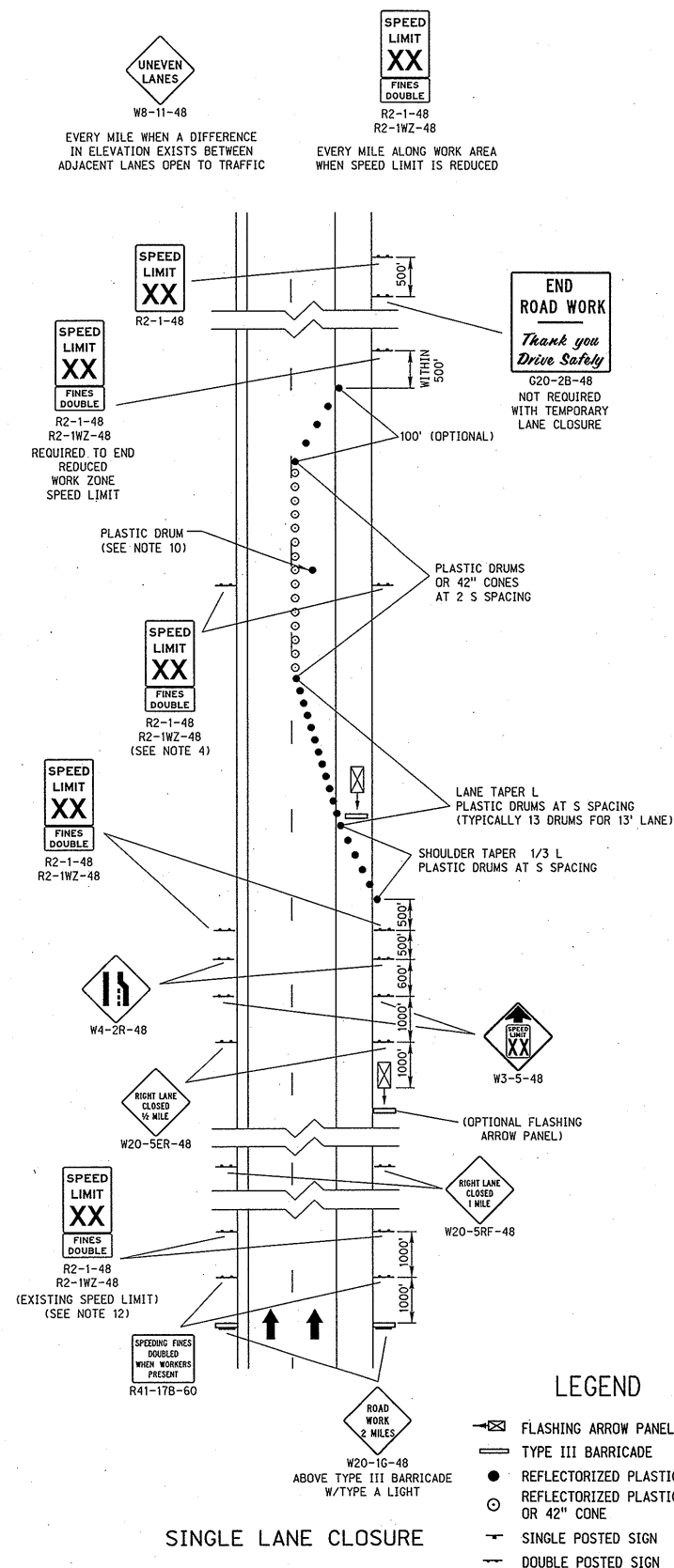
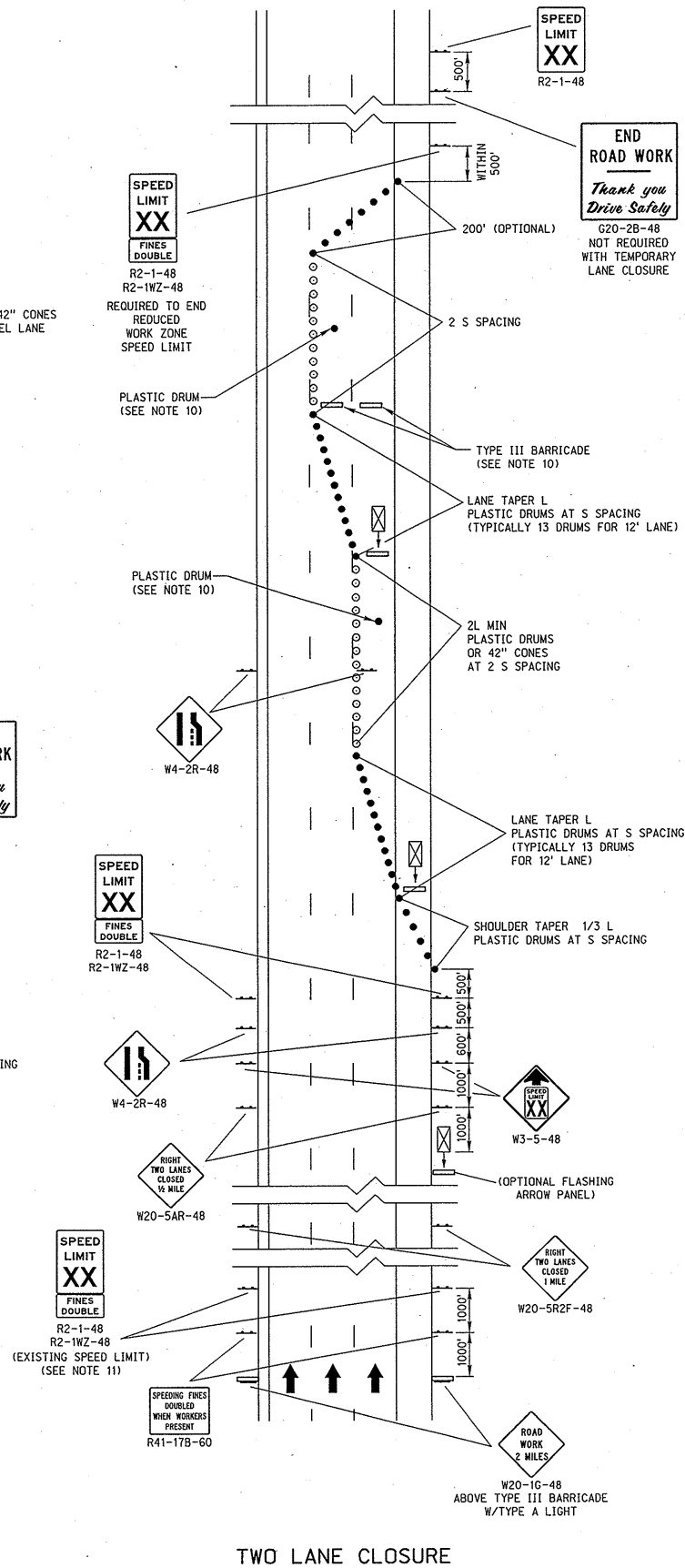
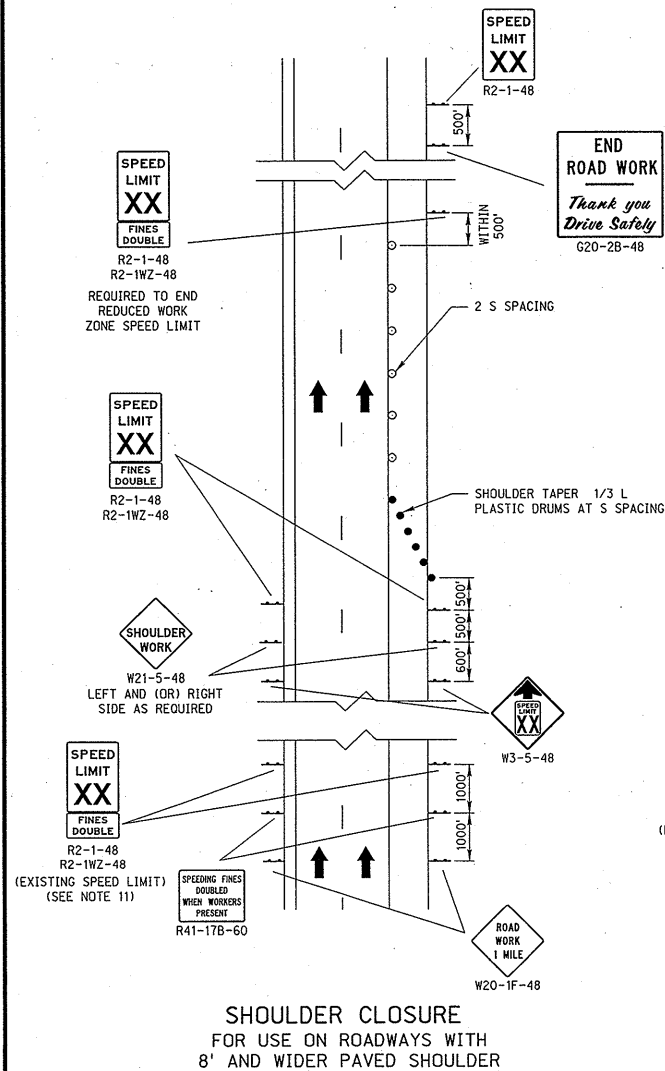
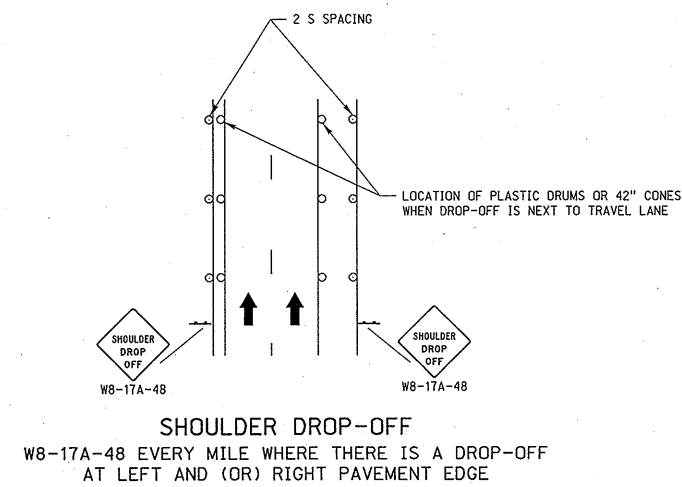
- WORK ZONE SPEED LIMITS SHALL NOT BE INSTALLED WITHOUT A SPEED ZONE AUTHORIZATION COMPLETED BY THE DEPARTMENT.
- REDUCED SPEED LIMITS SHOULD BE USED ONLY IN THE SPECIFIC PORTION OF THE WORK ZONE WHERE CONDITIONS OR RESTRICTIVE FEATURES ARE PRESENT. HOWEVER, FREQUENT CHANGES IN THE SPEED LIMIT SHOULD BE AVOIDED. THE REDUCTION OF SPEED SHOULD BE DESIGNED SO VEHICLES CAN SAFELY TRAVEL THROUGH THE WORK ZONE WITH A SPEED LIMIT REDUCTION OF NO MORE THAN 10 MPH UNLESS OTHERWISE NOTED IN THE PLANS.
- WORK ZONE SPEED LIMITS SHOWN ARE TYPICAL APPLICATIONS ONLY AND ARE NOT TO BE ASSUMED AS THE SPEED LIMITS REQUIRED FOR THE WORK.
- EXISTING SPEED LIMIT SIGNS SHALL BE REMOVED OR COVERED WHEN A REDUCED WORK ZONE SPEED LIMIT IS IN EFFECT IN THE SAME AREA.
- WORK ZONE SPEED LIMIT SIGNS SHALL BE INSTALLED EVERY MILE THROUGH THE WORK AREA WHEN SPEED ZONE IS REDUCED.
- A SPEED LIMIT SIGN ENDING THE REDUCED SPEED ZONE SHALL BE INSTALLED AT THE END OF EACH ZONE.
- DOUBLE FINES AND REDUCED SPEED ZONE SIGNING ARE NOT REQUIRED FOR SHORT-DURATION WORK LESS THAN 12 HOURS.

TAPER FORMULA

LEGEND

- L - S x W FOR SPEEDS OF 45 MPH OR MORE
- L -  $\frac{WS^2}{80}$  FOR SPEEDS OF 40 MPH OR LESS.
- WHERE:
- L - MINIMUM LENGTH OF TAPER.
- S - NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.
- W - WIDTH OF OFFSET (LANE WIDTH).
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- PORTABLE DYNAMIC MESSAGE SIGN

R7	JAN 18	NDOR BORDER TO NDOT BORDER
R6	JUN 14	2009 MUTCD UPDATE
R5	OCT 98	REVISE CHANNELIZATION DEVICES, TAPER
REV. NO.	DATE	DESCRIPTION OF REVISION
NEBRASKA DEPARTMENT OF TRANSPORTATION STANDARD PLAN NO. 920-R7 TRAFFIC CONTROL, CONSTRUCTION AND MAINTENANCE		
ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:		
		
9-1-2017 DATE		
ORIGINAL: OCTOBER 1998 DATE		
		3 3



## NOTES:

1. FLAGGERS SHALL BE PROVIDED WHENEVER THE CONTRACTORS OPERATION ENDOUCHES ON THE OPEN LANE.
2. REVERSE PROCEDURE FOR LEFT LANE CLOSURE.
3. WORK ZONE SPEED LIMITS SHALL NOT BE INSTALLED W/O A SPEED ZONE AUTHORIZATION COMPLETED BY THE DEPARTMENT. WHEN A REDUCED SPEED LIMIT IS USED, IT SHALL COMPLY WITH THE REQUIREMENTS OF NDOT OPERATING INSTRUCTION 60-18, WORK ZONE SPEED LIMITS.
4. SPEED LIMIT SIGNS R2-1 SHALL BE 48" X 60" WHEN USED ON INTERSTATES OR FREEWAYS. 30" X 36" SIGNS MAY BE USED ON ALL OTHER ROADWAYS. SPEED LIMIT SIGNS (IF REQ'D FOR WORK) SHALL BE INSTALLED EVERY MILE THRU THE WORK AREA, WHEN THE SPEED LIMIT IS REDUCED.
5. THE FLASHING ARROW PANELS FOR TAPERS SHOULD BE VISIBLE FOR AT LEAST 1/2 MILE AND, IF NECESSARY, SHOULD BE RELOCATED TO PROVIDE THE MAXIMUM VISIBILITY.
6. FOR FOG SEALS, SLURRY SEALS, ARMOR COATS, CRACK AND JOINT SEALING WHERE ALL LANES OF TRAFFIC WILL BE REOPENED BEFORE NIGHT, THE CONTRACTOR MAY USE 36" OR 42" CONES IN PLACE OF PLASTIC DRUMS ALONG THE WORK AREA. WHEN USED 36" CONES SHALL BE CONSIDERED SUBSIDIARY TO THE WORK.
7. PLASTIC DRUMS SHALL BE REQUIRED TO BE PLACED IN FRONT OF LANE EXCAVATIONS IN PAVEMENT AND SLAB REPAIR, AND OTHER WORK ACTIVITIES AS DIRECTED BY THE ENGINEER. PLASTIC DRUMS SHALL BE REQUIRED FOR ALL TAPERS AND LANE SHIFTS.
8. ALL CONFLICTING PAVEMENT MARKINGS ARE REQ'D TO BE REMOVED IF THE LANE CLOSURE IS TO REMAIN IN PLACE LONGER THAN 72 HOURS.
9. BRIDGE WORK OR OTHER APPROPRIATE ADVANCE SIGN MAY BE USED IN PLACE OF ROAD WORK.
10. PLACE A PLASTIC DRUM OR TYPE III BARRICADE AS DIRECTED BY THE ENGINEER IN THE CENTER OF THE CLOSED LANE(S) APPROXIMATELY EVERY 1/4 MILE.
11. THE SPEED LIMIT SIGN SHOWN FOLLOWING THE "SPEEDING FINES DOUBLED WHEN WORKERS PRESENT" SIGN IS NOT REQUIRED IF W3-5 "REDUCED SPEED AHEAD" OR OTHER SPEED LIMIT SIGN IS LOCATED WITHIN 1/2 MILE.
12. SIGNS W20-5E, W20-5RF AND W20-1G MAY BE REDUCED TO 1500 FT, 1/2 MILE AND 1 MILE SPACING RESPECTIVELY IN LOW VOLUME AREA AT THE DIRECTION OF THE ENGINEER.

## TAPER FORMULA

$$L = S \times W \text{ FOR SPEEDS OF 45 MPH OR MORE.}$$

$$L = \frac{WS^2}{60} \text{ FOR SPEEDS OF 40 MPH OR LESS.}$$

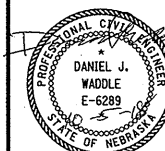
WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

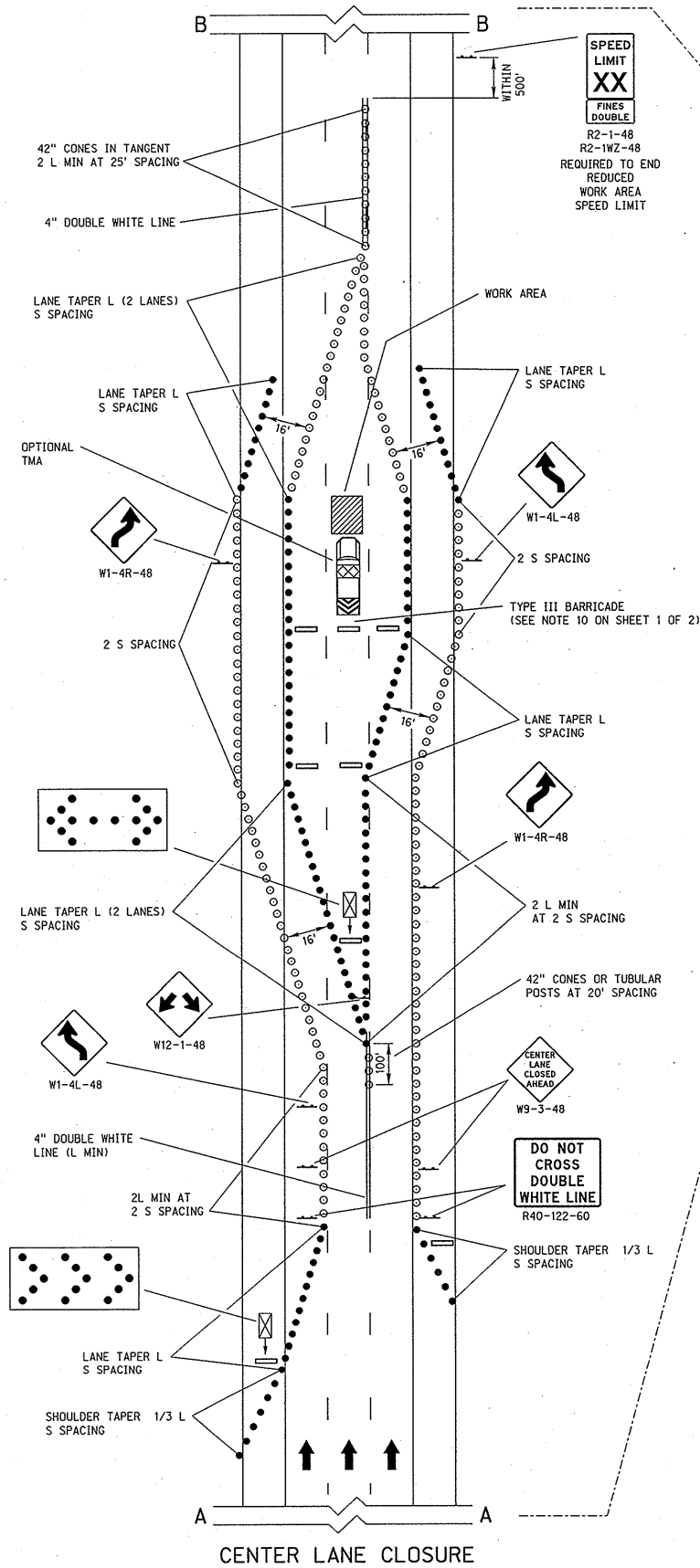
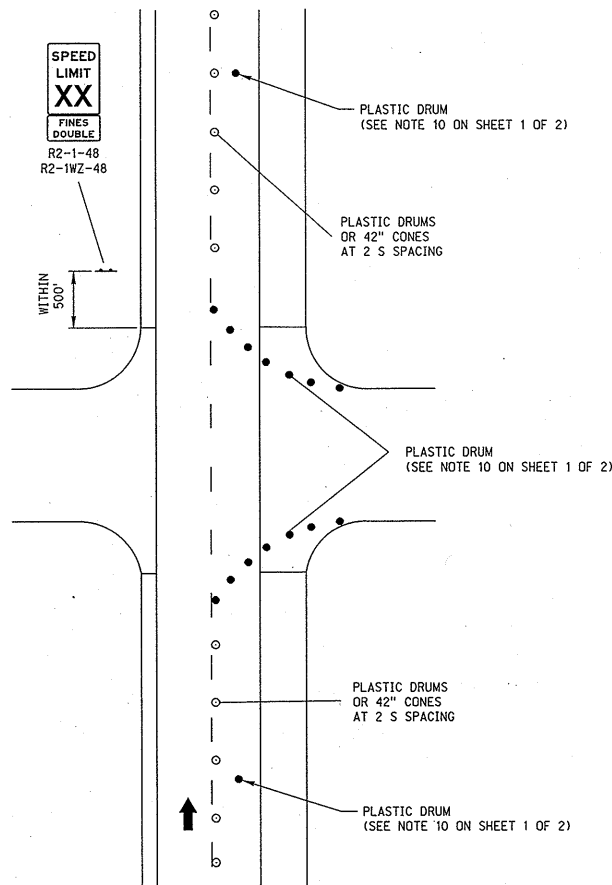
REV. NO. DATE DESCRIPTION OF REVISION

NEBRASKA DEPARTMENT OF TRANSPORTATION  
STANDARD PLAN NO. 926TYPICAL LANE CLOSURE PLAN  
FOR MULTILANE ROADWAYSACCEPTED BY FHWA FOR USE ON THE  
NATIONAL HIGHWAY SYSTEM:DATE  
10/23/13ORIGINAL:  
JANUARY 2019  
DATE1  
2

## LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN

# SIDE ROAD ENTRY WITHIN LANE CLOSURE



MATCH LINE

MATCH LINE

- LEGEND**
- FLASHING ARROW PANEL
  - TYPE III BARRICADE
  - REFLECTORIZED PLASTIC DRUM OR 42" CONE
  - SINGLE POSTED SIGN
  - DOUBLE POSTED SIGN
  - TRUCK MOUNTED ATTENUATOR (TMA)

REV. NO.	DATE	DESCRIPTION OF REVISION

NEBRASKA DEPARTMENT OF TRANSPORTATION  
STANDARD PLAN NO. 926  
**TYPICAL LANE CLOSURE PLAN  
FOR MULTILANE ROADWAYS**

ACCEPTED BY FHWA FOR USE ON THE  
NATIONAL HIGHWAY SYSTEM:

DANIEL J. WADDE  
E-6289  
DATE: 10/23/18

ORIGINAL:  
JANUARY 2019  
DATE:  

2  
2